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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,065	12/08/2005	Oskar Axelsson	PN0374	1049
36335 7590 03/18/2010 GE HEALTHCARE, INC. IP DEPARTMENT 101 CARNEGIE CENTER PRINCETON, NJ 08540-6231				
EXAMINER				
SCHLIENTZ, LEAH H				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/560,065

Applicant(s)

AXELSSON ET AL.

Examiner

Leah Schlientz

Art Unit

1618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/20/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-11, 13-21, 23-25, 27-30 and 39-53 is/are pending in the application.
- 4a) Of the above claim(s) 16, 28-30 and 44-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11, 13-15, 17-21, 23-25, 27 and 39-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Acknowledgement of Receipt

Applicant's Response, filed 11/20/09, in reply to the Office Action mailed 8/20/09, is acknowledged and has been entered. Claims 1, 13-21, 23-25, 27-30, 47-53 have been amended. Claims 6, 12, 22, 26, 31-38 and 54-61 have been cancelled. Claims 1-5, 7-11, 13-21, 23-25, 27-30 and 39-53 are pending, of which claims 44-53 are withdrawn from consideration at this time as being drawn to a non-elected invention. Claims 16 and 28-30 are withdrawn as being drawn to non-elected species. Claims 1-5, 7-11, 13-15, 17-21, 23-25, 27 and 39-43 are readable upon the elected invention and are examined herein on the merits for patentability.

Response to Arguments

Any rejection not reiterated herein has been withdrawn.

Applicant's arguments have been considered but are moot in view of new ground(s) of rejection.

Double Patenting

Claims 1-5, 7-11, 13-15, 17-21, 23-25, 27 and 39-43 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims of copending Application No. 11/913,079, for reasons set forth in the previous Office Action.

Applicant's Response filed 11/20/09 did not address the provisional double patenting rejections. Accordingly, the rejection is maintained.

Claims 1-5, 7-11, 13-15, 17-21, 23-25, 27 and 39-43 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims of copending Application No. 11/627,529, for reasons set forth in the previous Office Action.

Applicant's Response filed 11/20/09 did not address the provisional double patenting rejections. Accordingly, the rejection is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-11, 13-15, 17-21, 23-25, 27 and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guillet (US 2003/0177868) in view of Mao *et al.* (US 6,686,308).

Guillet discloses that internally cross-linked macromolecules can be used in preparation of nanoparticles of metals, i.e. metal particles which are substantially spherical in shape and have an average diameter in the range of 0.1-10 nm, preferably 0.1-5 nm. Polyacrylic acid is disclosed as polymer. Palladium, platinum, titanium and

molybdenum are examples of metals which can be prepared in nanoparticle form according to the invention, for use in catalysis. Substantially any metal which is stable in its metallic form and which has a water soluble salt can be used in this way. The metal salt can be dialyzed against sodium polyacrylate (or similar polymeric salt) and replace it with the other metal. Then the product is reduced, e.g. by application of laser radiation, and solid metal nanoparticles e.g. silver particles, in some cases surrounded by a fine layer of residual polymer which has a stabilizing effect, are obtained (paragraph 0032).

Guillet does not specifically recite tungsten as a metal that can be prepared as a solid metal nanoparticle having a residual polymer which has a stabilizing effect.

Mao discloses that supported metal nanoparticles having an average particle size of 3.0 nm or less. Typical catalyst metals are selected from platinum, palladium, ruthenium, molybdenum, tungsten, etc. (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to It would have been obvious to one of ordinary skill in the art at the time of the instant invention to substitute tungsten as a functional equivalent to metals useful in catalysis such as palladium, platinum, titanium, and molybdenum disclosed by Guillet. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in *Graham*. One such rationale includes the simple substitution of one known element for another to obtain predictable results. The

key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. See MPEP 2143.

In the instant case, the substituted components (tungsten and various other metal nanoparticles known for catalysis) and their functions were known in the art at the time of the instant invention, as shown by Mao. One of ordinary skill in the art could have substituted one known metal nanoparticle for another, and the results of the substitution would have been predictable, that is preparation of a tungsten nanoparticle surrounded by a fine layer of residual polymer (polyacrylic acid), which has a stabilizing effect. One would have had a reasonable expectation of success in doing so because Guillet teaches that substantially any metal which is stable in its metallic form and which has a water soluble salt can be used, and because Mao teaches that tungsten nanoparticles are equivalent to other metals disclosed by Guillet as a catalyst.

Regarding claim 11, Mao teaches alloys including the claimed elements (column 3, line 52).

Regarding claims 17-21, the Office does not have the facilities for examining and comparing applicant's product with the product of the prior art in order to establish that the product of the prior art does not possess the same functional characteristics of the claimed product. In the absence to the contrary, the burden is upon the applicant to prove that the claimed products are functionally different than those taught by the prior art and to establish patentable differences. See *Ex parte Phillips*, 28 U.S.P.Q.2d 1302, 1303 (PTO Bd. Pat. App. & Int. 1993), *Ex parte Gray*, 10 USPQ2d 1922, 1923 (PTO Bd. Pat. App. & Int.) and *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977). In the

instant case, Guillet teaches that the nanoparticles are surrounded by a residual layer of polymer, which is interpreted to be within the scope of the claims.

Regarding claim 25, copolymers are disclosed (Guillet, paragraph 0025, 0026).

Regarding claims 39-43, it is noted that the recitation of the intended use of the nanoparticles as a diagnostic agent or x-ray contrast agent has not been given patentable weight to distinguish over Guillet because the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Claims 1, 7-10, 13-15, 20, 21, 23-25, 27 and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rioux *et al.* (US 2004/0101564).

Rioux discloses a particle that includes a radiopaque material (abstract). Matrix material (12) includes polyacrylic acids, polymethacrylic acids, and copolymers (paragraph 0060). Radiopaque materials (14) include a metal (e.g. tungsten) (paragraph 0067). The radiopaque material has a diameter from about 2 to about 20 microns (paragraph 0019). Given the broadest reasonable interpretation of claim 1, each individual radiopaque material 14 of Rioux can be considered a particle "core," which is "coated" by the matrix material 12.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to employ polyacrylic acid as matrix and tungsten as radiopaque material in the compositions disclosed by Rioux. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in *Graham*. One such rationale includes the choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. See MPEP 2143. In the instant case, the components of matrix and ferromagnetic material (polyacrylic acid and tungsten, respectively) and their functions were known in the art at the time of the instant invention. One of ordinary skill in the art could have selected polyacrylic acid as matrix from the finite list of matrix materials, and selected tungsten from the finite list of radiopaque materials from the disclosure of Rioux, and the results of the combination would have been predictable, that is preparation of a particle comprising micron-sized tungsten particles within a polyacrylic acid matrix (i.e. coated by polyacrylic acid, suitable for use in x-ray imaging).

Conclusion

No claims are allowed at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leah Schlientz whose telephone number is (571)272-9928. The examiner can normally be reached on Monday-Tuesday and Thursday-Friday 9 AM-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Hartley can be reached on 571-272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael G. Hartley/
Supervisory Patent Examiner, Art Unit 1618

LHS